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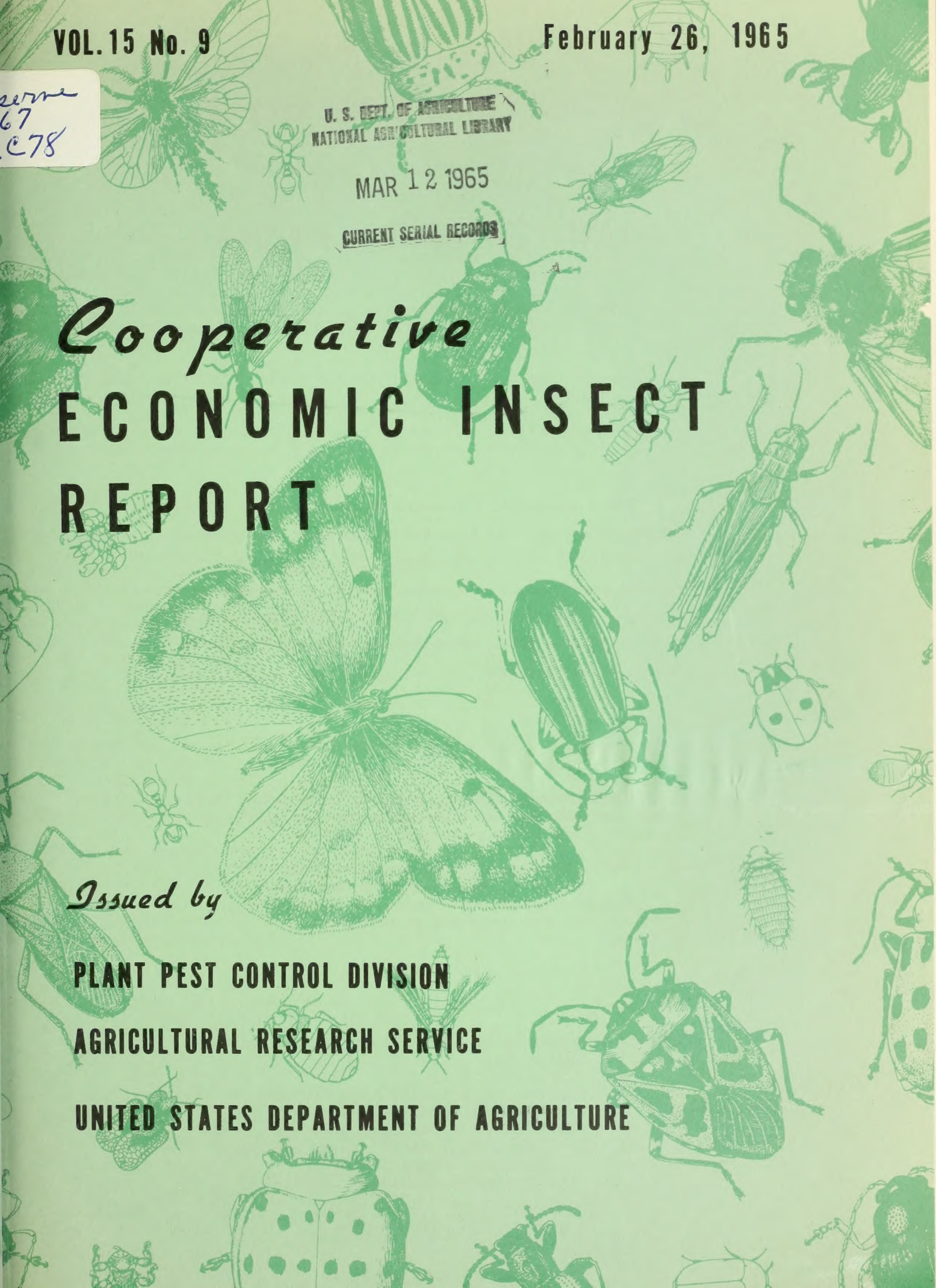

VOL. 15 No. 9

February 26, 1965

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Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 15 February 26, 1965 Number 9

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GREENBUG appearing on small grain in southern Georgia, and present on wheat in several areas of Oklahoma. PEA APHID moderate to heavy on alfalfa in Eddy County, New Mexico, with few controls applied; counts rather high on alfalfa in areas of Arizona. Damage to alfalfa by a WEEVIL (Hypera brunneipennis) evident on 65 percent of terminals on Yuma Mesa and 25 percent of terminals in Yuma and Gila Valleys in Arizona. (p. 123). CLOVER MITE also damaging alfalfa on Yuma Mesa. (p. 124).

GLOVER SCALE and YELLOW SCALE populations on Florida citrus highest in 15 years of record. (p. 124).

MOSQUITOES active in Jefferson County, Texas, and in Payne County, Oklahoma. SHEEP KED moderate to very numerous on sheep in areas of Utah. (p. 128).

DETECTION

Three species of STONEFLIES, Allocapnia recta, A. aurora and Leuctra sp., reported for first time from South Carolina. (p. 129). New county and parish records reported were: EUROPEAN CORN BORER (Ostrinia nubilalis) from Aiken, Allendale, Edgefield, Lexington, Newberry, Orangeburg, Pickens, Richland, Union, Williamsburg and York Counties, South Carolina, (p. 123); a WHITEFLY (Dialeurodes kirkaldyi) from Palm Beach County, Florida, (p. 127); IMPORTED FIRE ANT (Solenopsis saevissima richteri) from Winn and Jackson Parishes, Louisiana, (only Claiborne Parish remains free of infestations in State); Cleburne County, Alabama; Jeff Davis and Wilkinson Counties, Georgia; and Franklin County, Florida, (p. 129).

SPECIAL REPORTS

Beet Leafhopper Survey in Desert Areas of Southern Utah and Nevada, Southwestern California and Central Arizona. (p. 125). If present conditions prevail, movement into cultivated areas is expected to be light to moderate in southeastern California, central Arizona, southern Nevada and Utah, light in central and northern Utah, and moderate in eastern Utah and western Colorado.

Status of the Screw-worm in the Southwest. (p. 130). No screw-worm cases were reported in the Southwestern Eradication Area, from Arizona or from the Republic of Mexico during the period February 14-20.

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Wheat, Corn, Alfalfa and Potatoes in Montana in 1964. (pp. 131-133).

Summary of Insect Conditions in the United States - 1964

Cereal and Forage Insects (continued)
Small Grain Insects (p. 134).

Reports in this issue are for week ending February 19 unless otherwise indicated.

WEATHER OF THE WEEK ENDING FEBRUARY 22

Most of the week was fair and sunny with rising temperatures west of the Mississippi. Temperatures remained near or below normal in the East. Most of the week's precipitation was limited to the South and the Pacific Northwest.

TEMPERATURE: This week was 5 degrees or more warmer than normal in the Pacific States, the northern Rockies, northern Great Plains, and the middle Mississippi River Basin; and 5° to 10° warmer than the previous week between the Mississippi River and the Cascades and Sierra Nevada Mountains. In the midcontinent area, rising temperatures reached very high levels for the season on the 19th and 20th and greatly reduced the snow cover. The weekend cold wave reduced cold temperatures to much below normal levels throughout the central area. In the Appalachians and in the Atlantic Coast States north of the Florida Peninsula, temperatures remained near seasonal level during most of the period.

PRECIPITATION: Moderate to heavy precipitation was mainly limited to the Gulf and South Atlantic Coast States where widespread heavy rains on the 16th and 17th totaled from 1 to 2 inches in much of the area. In western Washington, frequent rains also totaled from 1 to over 2 inches in agricultural areas. Elsewhere, precipitation was light except for moderate amounts in a few scattered areas in the Northeast and in the Great Lakes region. Only a few measurable amounts were recorded in the Dakotas and much of the Great Basin and in the Far Southwest. The conditions are still very dry in the Great Plains area from the Texas Panhandle northward and in western Arkansas.

SNOW COVER: East of the Rockies, snow cover is limited to the Appalachian highlands northeast, the immediate Great Lakes States, and north of a line extending from central Wisconsin to southern Nebraska. (Summary supplied by U.S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Schizaphis graminum) - OKLAHOMA - Ranged 0-15 per linear foot in wheat checked in Kiowa, Jackson, Kingfisher, Blaine, Dewey, Custer, Washita and Beckham Counties. (Okla. Coop. Sur.). ARKANSAS - Surveys negative. Small grain acreage very low in all sections, except in northwest where wheat is grown. (Ark. Ins. Sur.). GEORGIA - Infestations light on small grains in southern part of State. (Johnson). NEW MEXICO - None detected in fields of small grains checked in Chaves, Eddy and Lea Counties. (N.M. Coop. Rpt.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Averaged 20 per linear foot in wheat in Jackson County. None found in other areas checked. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Light, spotted infestations noted in small grain fields in Chaves and Eddy Counties. (N.M. Coop. Rpt.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - ARKANSAS - Counts ranged zero to very low in all areas checked. Small grain acreage very low except in northwest where wheat is grown. (Ark. Ins. Sur.).

APHIDS - SOUTH CAROLINA - Caused serious damage to oats on sandier soils in southern Fairfield County; controls urged. (Nettles et al, Feb. 16).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - OKLAHOMA - Live larvae present in 16 percent of stalks checked in field of corn in Beckham County. None found in field in Okmulgee County. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH CAROLINA - Infestations found in following counties during September and October, 1964: Aiken, Allendale, Edgefield, Lexington, Newberry, Orangeburg, Pickens, Richland, Union, Williamsburg and York. These are all new county records. (Kirk).

A SPRINGTAIL - OKLAHOMA - Averaged 50 per linear foot in field of wheat in Beckham County. (Okla. Coop. Sur.).

GRASSHOPPERS - OKLAHOMA - Egg survey in Pittsburg County showed 1 egg pod per 20 square feet. Control program conducted in area during 1964 season. (Okla. Coop. Sur.). ALABAMA - Adults of unspecified species noted during warmer days in pastures, wooded areas and in fields of broomsedge (Andropogon sp.) in southern and central areas. (Barwood et al.).

PEA APHID (Acyrthosiphon pisum) - ARIZONA - Populations ranged 800-2,500 per 100 sweeps on alfalfa in Yuma County and 500-1,500 in Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Moderate to heavy in alfalfa near Artesia, Eddy County; few controls being applied. Mostly light in Dona Ana County alfalfa. (N.M. Coop. Rpt.). OKLAHOMA - Averaged 5 per square foot in overwintering alfalfa in Payne County and 1 per square foot in Choctaw County. (Okla. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light to moderate, spotted infestations noted in Eddy County alfalfa. (N.M. Coop. Rpt.).

A WEEVIL (Hypera brunneipennis) - ARIZONA - Some decrease in populations found in alfalfa in Yuma County, particularly in heavy infestations on Yuma Mesa. Damage evident on 65 percent of terminals on Yuma Mesa and 25 percent of terminals in Yuma and Gila Valleys. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Adult and larval populations decreased sharpely on alfalfa in Yuma, Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

GRANULATE CUTWORM (Feltia subterranea) - ARIZONA - Light infestations noted in some alfalfa in Yuma County, particularly on lighter, sandier soils. (Ariz. Coop. Sur.).

CLOVER MITE (Bryobia praetiosa) - ARIZONA - Heavy but scattered populations damaging alfalfa on Yuma Mesa in Yuma County. (Ariz. Coop. Sur.).

FRUIT INSECTS

Citrus Insect Situation in Florida - Mid-February - CITRUS RUST MITE (Phyllocoptruta oleivora) infested 55 percent of groves (norm 64 percent); 36 percent economic (norm 40 percent). Population below average, in moderate range on leaves and fruit. Increase expected. Highest districts south, west and east. East has heavier infestations on fruit than on leaves. TEXAS CITRUS MITE (Eutetranychus banksi) infested 33 percent of groves (norm 19 percent); 11 percent economic (norm 5 percent). Population above average, but in low range typical for February. Little change expected. Highest district west. CITRUS RED MITE (Panonychus citri) infested 27 percent of groves (norm 56 percent); 9 percent economic (norm 28 percent). Population near record low level. Slight increase expected. Highest districts west and north. SIX-SPOTTED MITE (Eotetranychus sexmaculatus) infested 6 percent of groves (norm 9 percent); 1 percent economic (norm 1 percent). Below normal abundance, in very low range. Gradual increase expected; groves should be checked frequently. GLOVER SCALE (Lepidosaphes gloverii) infested 87 percent of groves; 32 percent economic. More abundant than any time in past 15 years. Increase expected. Highest districts south, central and east. PURPLE SCALE (L. beckii) infested 80 percent of groves; 20 percent economic. Population entered high range; few infestations important. Little change expected. Highest districts south, central and east. CHAFF SCALE (Parlatoria pergandii) infested 76 percent of groves; 19 percent economic. Population above normal and will increase. Most infestations will be light to moderate. Highest districts east, south and central. YELLOW SCALE (Aonidiella citrina) infested 67 percent of groves; 21 percent economic. Population is highest in 15 years of record. Further increase expected. Highest districts central and south, a few heavy infestations present in north. BLACK SCALE (Saissetia oleae) at low level and decreasing except in east. WHITEFLIES, MEALYBUGS and Unaspis citri continue above average. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

BLACK SCALE (Saissetia oleae) - CALIFORNIA - Adults and nymphs locally heavy on citrus trees in Hollister, San Benito County. (Cal. Coop. Rpt.).

BARNACLE SCALE (Ceroplastes cirripediformis) - CALIFORNIA - Probably this species medium locally on citrus in Fremont, Alameda County. Apparently weather has been favorable for population increases. (Cal. Coop. Rpt.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Chemical Control Zone - In State of Nuevo Leon, 16 trees with 50 infested leaves found on 7 properties. Small citrus tree in can on residential property at Benjamin Hill, Sonora, infested with larvae and egg spirals. Plant brought from State of Jalisco in August, 1964. Other small citrus trees on property inspected; infested tree destroyed and inspection of other citrus at Benjamin Hill started immediately. Biological Control Zone - Seven properties in Municipios Hidalgo and Guemez, Tamaulipas, lightly infested. Prospaltella opulenta (a eulophid) now widely established in State of Yucatan and Territory of Quintana Roo. Control satisfactory in most areas. (PPC Mex. Reg., Jan. Rpt.).

TRUCK CROP INSECTS

APHIDS - Acyrthosiphon barri medium on older lettuce heads in fields; controls required in Yuma County. Myzus persicae (green peach aphid) continues increase on lettuce in Yuma County; controls necessary in most fields. (Ariz. Coop. Sur.).

TOMATO PSYLLID (Paratrioza cockerelli) - CALIFORNIA - Larvae, probably this species, medium on pepper plants in Spring Valley, San Diego County. (Cal. Coop. Rpt.).

Beet Leafhopper Survey in Desert Areas of Southern Utah and Nevada, Southwestern California and Central Arizona

Surveys were conducted for beet leafhopper (*Circulifer tenellus*) during the period January 26 to February 6, 1965. If present conditions prevail, spring movement from the southern desert breeding grounds to cultivated districts of southeastern California, central Arizona, southern Nevada and Utah is expected to be light to moderate, movement to central and northern Utah light, and movement to eastern Utah and western Colorado moderate with possibility some heavy concentration of leafhoppers due to local topography. The southern desert breeding grounds, comprising approximately 50,000 square miles of potential weed host area, were considered to have an estimated 42 percent host plant cover at time of survey. Fall and winter rains promoted host development over considerable portions of winter breeding areas in Arizona and some areas in southern Utah. Plant growth was spotty in southeastern California and southern Nevada. General storms in the southeastern desert area at the end of the first week in February should help sustain weed hosts and may cause additional seeds to germinate. The average number of leafhoppers per square foot in areas where host plants were present was 0.04 compared with 0.15 in 1964, 0.02 in 1963, 0.012 in 1962 and 0.02 in 1961. It is estimated that overwintering beet leafhoppers in the southern desert breeding grounds total 12 billion in 1965 compared with 112 billion in 1964 and 7.7 billion in 1963. This report covers only the beet leafhopper situation in the area surveyed. It does not have reference to populations that may have overwintered in local breeding areas in northern and eastern Utah and in western Colorado and Nevada. (PPC, West. Reg.).

A STINK BUG (*Thyanta punctiventris*) - CALIFORNIA - Light in sugar beets in Caruthers, Fresno County. (Cal. Coop. Rpt.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Light to medium on seed sugar beets in Tempe-Mesa area, Maricopa County. (Ariz. Coop. Sur.).

A NOCTUID MOTH (*Proxenus mindara*) - CALIFORNIA - Light in sugar beets in Caruthers, and in strawberries in several locations in Fresno County. (Cal. Coop. Rpt.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Very young larvae require treatments on lettuce in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

A LEAF ROLLER MOTH (*Platynota stultana*) - CALIFORNIA - Larvae medium on sugar beets in Caruthers and Fresno, Fresno County. (Cal. Coop. Rpt.).

A LEAF MINER FLY (*Liriomyza* sp.) - FLORIDA - Caused light to heavy damage and 100 percent infestation of 200 celery plants, 21 inches high, in commercial planting at Sanford, Seminole County. (Desin).

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - Newly infested property found in Grady County, GEORGIA; 13 properties released from regulation in Appling, Decatur, Grady, Pierce and Wayne Counties. Wayne County now free of known infestations. Surveys in 17 southern ALABAMA counties negative except for one property in Houston County. Surveys in 19 LOUISIANA parishes revealed newly infested properties in East Feliciana, Livingston, St. Helena, St. Landry, Tangipahoa and Washington Parishes; 87 properties released from regulation in East Baton Rouge, Livingston, St. Helena and Tangipahoa Parishes. (PPC South Reg., Jan. Rpt.).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - GEORGIA - Light on tobacco in plant beds in southern area. (Johnson).

VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) - GEORGIA - Light to moderate damage to tobacco in plant beds in southern area. (Johnson).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Overwintering specimens taken from seed capsules of althea in Matagorda County. (Texas Coop. Rpt., Sparks). FLORIDA - Larvae taken on wild cotton (Gossypium hirsutum) at 2 locations February 9, and at 1 location February 11 at Cape Sable, Monroe County. (Weaver, Humphries et al.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

CONIFER BARK BEETLES (Dendroctonus spp.) - TEXAS - Evaluation survey over portions of 9 southeastern counties for D. frontalis (southern pine beetle) completed. Active brood trees, mostly single-tree infestations, scattered throughout area and amounted to approximately 2 trees per 1,000 acres surveyed. Efforts to reduce damage by D. terebrans (black turpentine beetle) on National forests located in Angelina, Houston, San Augustine and Trinity Counties continued. Damage remained constant on loblolly and shortleaf pines. Control performed in hazard areas, such as recent logging sites and where mechanical damage occurred in site preparation, to prevent population buildups. (Texas For. Pest Comm., Jan. Rpt.; Williamson).

ENGRAVER BEETLES (Ips. spp.) - TEXAS - No unusual damage by I. avulsus, I. grandicollis and I. calligraphus reported during month. (Texas For. Pest Comm., Jan. Rpt.; Williamson).

GYPSY MOTH (Porthetria dispar) - Survey in vicinity of positive trapsites in NEW JERSEY revealed one or two egg clusters at majority of sites; 14-43 egg clusters taken at 4 sites, however. Egg cluster taken in Cedar Grove, Essex County, first record for county in recent years. Surveys in positive trapsites in Jefferson County, NEW YORK, revealed 2 additional hedgerow infestations and 3 spots of old clusters or pupal cases located at points away from any previously known infestations. Inspection of 13 cords of firewood in Putnam County revealed 14 egg masses. Total of 31 egg masses treated and removed from 135 redcedar posts in CONNECTICUT destined for out of State. Scouting completed in MASSACHUSETTS and RHODE ISLAND nurseries; infestations, when found, generally very light. (PPC East. Reg., Jan Rpt.).

A WHITEFLY (Dialeurodes kirkaldyi) - FLORIDA - Larvae and pupae severe on leaves of Jasminum sambac 'Grand Duke' in landscape company at Lake Park, Palm Beach County. (Long, Feb. 12). This is a new county record. (ARS).

WHITEFLIES - ALABAMA - Unspecified species ranged 3-500 nymphs attached to undersides of gardenia leaves on numerous plants used as foundation plantings. (McQueen).

APHIDS - OKLAHOMA - Unidentified species moderate and damaging euonymus in greenhouse in Stillwater, Payne County. (Okla. Coop. Sur.). ARIZONA - Essigella fusca found on pines in nurseries in Phoenix area, Maricopa County. (Ariz. Coop. Sur.).

COCCIDS - FLORIDA - All stages of Howardia biclavis (mining scale) severe on stems of 85 inpsected plants of Jasminum multiflorum at Miami, Dade County. (Herrmann, Feb. 9). Parlatoria pseudaspidiotus severe on leaves of vanda orchid 'Rose Marie' at Largo, Pinellas County. (Bingaman, Barber, Feb. 10). Phenacaspis cockerelli moderate to severe on leaves of Magnolia grandiflora at nursery in Seminole, Pinellas County, (Bingaman, Miller, Barber, Feb. 8); moderate on leaves of Mangolia sp. at Okahumpka, Lake County, (Fatic, Feb. 12). Fiorinia theae (tea scale) taken on leaves of Camellia japonica in nursery at Gainesville, Alachua County, (Graham, Feb. 10); all stages severe on leaves of holly at nursery in Ormond Beach, Volusia County, (Pott). Aspidiella sacchari taken near root on stem of asparagus-fern (Asparagus sprengerii) at Hialeah, Dade County. (Stegmaier, Jan. 23). This is a new host record for Florida Division of Plant

Industry. (Fla. Coop. Sur.). ALABAMA - Crawlers of Fiorinia theae quite active on undersides of leaves of Burford holly in Lee, Tallapoosa and Elmore Counties. (McQueen). SOUTH CAROLINA - Fiorinia theae heavy on Burford holly and camellia; damage to holly serious enough to cause leaf fall. Infestations general from Clemson to Atlantic coast. (Nettles et al.). MARYLAND - Lecanium nigrofasciatum (terrapin scale) infested branches of red maple at Riverdale, Prince Georges County. (U. Md., Ent. Dept.). OKLAHOMA - Light numbers of probably Saissetia oleae (black scale) and moderate numbers of unidentified mealybug found on Ficus sp. in greenhouse in Stillwater, Payne County. (Okla. Coop. Sur.). CALIFORNIA - Protopulvinaria pyriformis (pyriform scale) heavy locally on Laurus nobilis in Pacific Palisades, Los Angeles County. Parlatoria pittospori adults medium on cedrus nursery stock in La Mesa, San Diego County. (Cal. Coop. Rpt.).

AN ANT (Camponotus sp.) - CALIFORNIA - Medium in and around buckwheat plants in Doyle, Lassen County. (Cal. Coop. Rpt.).

SPIDER MITES - CALIFORNIA - Eggs and nymphs of Oligonychus sp. medium on camphor trees. O. platani locally heavy on pryacantha shrubs and Tetranychus telarius (two-spotted spider mite) medium locally on rose bushes in Hollister, San Benito County. (Cal. Coop. Rpt.).

AZALEA LEAF MINER (Gracilaria azaleella) - CALIFORNIA - Larvae heavy on azalea nursery stock in San Diego County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - TEXAS - Considerable numbers of mosquitoes appeared in various sections of populated areas of Jefferson County during January. Culex salinarius was the most common species and Aedes sollicitans (salt-marsh mosquito) was frequently noted. Culex pipiens quinquefasciatus (southern house mosquito) was moderate on warm days during January and noted in dwellings. (Jefferson Co. Mosq. Control Comm., Jan. Rpt.; Thompson). OKLAHOMA - Larvae and adults of Culiseta inornata active in Payne County. Adults of unspecified species reported feeding in Pushmataha County on warm days. (Okla. Coop. Sur.).

CATTLE GRUBS (Hypoderma spp.) - OKLAHOMA - Counts of H. lineatum (common cattle grub) ranged 0-11 (averaged 2) per head on yearlings and 0-4 (averaged less than 1) on cows in Payne County; averaged 7 per head on cows in Kay County; light on cows in Pushmataha County. Adults active in Payne and Pushmataha Counties. (Okla. Coop. Sur.). UTAH - Grub infestations of Hypoderma spp. moderate on Wasatch County herds this winter (Daniels, Knowlton); moderately numerous on cattle in Garfield, Sanpete and Duchesne Counties (Lindsay, Purnell, Smith, Knowlton).

CATTLE LICE - OKLAHOMA - Several species ranged moderate to heavy on cattle in Payne, Noble, Marshall and Pushmataha Counties. (Okla. Coop. Sur.). UTAH - Infestations moderate to severe on untreated beef cattle in Wasatch County. (Daniels, Knowlton). Very troublesome on number of herds in Garfield County; moderatley numerous on cattle throughout Sanpete County; heavy on many herds in Duchesne County. (Lindsay, Purnell, Smith, Knowlton).

SHEEP KED (Melophagus ovinus) - UTAH - Moderate on sheep in Wasatch County farm flocks, and moderate to very numerous in Sanpete and Duchesne County flocks. (Knowlton).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Populations light (3 per head) on cattle in Pushmataha County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

COCKROACHES - UTAH - A problem in some homes and cafes in Heber area, Wasatch County. Supella supellectilium (brown-banded cockroach) infested additional home at Logan, Cache County, and apartment in Salt Lake, Salt Lake County. (Knowlton).

EARWIGS - ALABAMA - Troublesome in homes in Lee, Tallapoosa and Elmore Counties. (Thompson, Cattle).

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Annoying in several communities in Sanpete County. (Knowlton).

CLOVER MITE (Bryobia praetiosa) - MARYLAND - Annoying in 2 homes in Hancock area, Washington County. (U. Md., Ent. Dept., Feb. 12).

A CERAMBYCID BEETLE - MARYLAND - Adults of undetermined species found in home at Easton, Talbot County. (U. Md., Ent. Dept., Feb. 10).

CIGARETTE BEETLE (Lasioderma serricorne) - ALABAMA - Continues to be a problem. (McQueen).

DRUGSTORE BEETLE (Stegobium paniceum) - CALIFORNIA - Adults heavy in residence in Fairfield, Solano County. (Cal. Coop. Rpt.).

ANTS - MARYLAND - Winged forms of undetermined species swarmed in home basement at Centreville, Queen Annes County. (U. Md., Ent. Dept., Feb. 11). CALIFORNIA - Camponotus maccooki medium in and about home in Bangor, Butte County. (Cal. Coop. Rpt.).

WESTERN SUBTERRANEAN TERMITE (Reticulitermes hesperus) - UTAH - Damaging floors of two apartments in building at Logan, Cache County. (Knowlton).

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - MARYLAND - Winged forms swarmed in home basement near Lanham, Prince Georges County. (U. Md., Ent. Dept.).

STORED-PRODUCT INSECTS

A PRYALID MOTH (Aglossa caprealis) - SOUTH CAROLINA - Specimens taken in York County; species not common in State. Det. by R. C. Fox. (Nettles et al.).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - Collected for the first time in Winn and Jackson Parishes, LOUISIANA; only Claiborne Parish remains free of infestations in State. Found for the first time in Cleburne County, ALABAMA, and for the first time in Jeff Davis and Wilkinson Counties, GEORGIA. Found for the first time in Franklin County, FLORIDA. (PPC South. Reg., Jan. Rpt.).

STONEFLIES - SOUTH CAROLINA - Allocapnia recta, A. aurora and Leuctra sp. collected in the Wildcat Creek area of Clemson, Oconoee County, by C. D. Pless on December 31, 1964. Det. by H. H. Ross. These are new State records. (McAllister).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap *	*Agrotis ipsilon* (black cutworm)	*Carpocapsa pomonella* (codling moth)	*Chorizagrotis auxiliaris* (army cutworm)	*Estigmene acrea* (salt-marsh caterpillar)	*Faronta diffusa* (wheat head armyworm)	*Feltia subterranea* (granulate cutworm)	*Heliothis virescens* (tobacco budworm)	*H. zea* (bollworm, corn earworm, tomato fruitworm)	*Loxostege commixtalis* (alfalfa webworm)	*Loxostege similalis* (garden webworm)	*Loxostege sticticalis* (beet webworm)	*Ostrinia nubilalis* (European corn borer)	*Peridroma saucia* (variegated cutworm)	*Prodenia ornithogalli* (yellow-striped armyworm)	*Protoparce quinquemaculata* (tomato hornworm)	*Protoparce sexta* (tomato hornworm)	*Pseudaletia unipuncta* (armyworm)	*Spodoptera exigua* (beet armyworm)	*Spodoptera frugiperda* (fall armyworm)	*Trichoplusia ni* (cabbage looper)	Crops **
FLORIDA Gainesville 2/15			BL	1					1							1				1				
GEORGIA Tifton 2/4-10	30-70	1.8	BL							0	0							0	0					
TEXAS Brownsville 2/13-15	41-67	0.18	5 BL	14			1		81		15					2	5					10	10	

* BL = blacklight; I = incandescent; MV = mercury vapor; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

No screw-worm cases were reported from the Southwestern Eradication Area, the State of Arizona nor from the Republic of Mexico during the period February 14-20. Sterile screw-worm flies continue to be released in the grid patterns in Mexico and over rivers. Total flies released: 3,466,250 in Texas and 66,452,000 in Mexico.

	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
Year	Current	Cumulative	Current	Cumulative	Current	Cumulative
	Table 1.	Comparison of specimens reported during corresponding weeks in 1963 and 1964 in Southwestern Eradication Area.				
1963	4	134	14	134	28.57	100.00
1964	0	0	26	221	0.00	0.00
1965	0	4	33	381	0.00	1.04
	Table 2.	Comparison of specimens reported during corresponding weeks and in a corresponding area in 1964 in the United States-Mexico Barrier Zone.*				
1964	16	117	16	82	100.00	142.68
1965	0	337	7	220	0.00	153.18
	Table 2A.	Mexican portion of Barrier Zone only.				
1964	16	114	12	4	33.33	335.29
1965	0	335	0	130	0.00	0.00

* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm population in the United States. (Anim. Dis. Erad. Div.).

CORRECTIONS

CEIR 15(7):90 - Last paragraph, line 5 - Chnootribia similis should read Chnootriba similis; last line - Lygaeus pandurus should read *Spilostethus* pandurus.

CEIR 15(7):91 - Truck Crop Insects, line 2 - Leptoglossus membranaceous should read Leptoglossus membranaceus; last line - Eurydema ornatum should read Eurydema ornata.

CEIR 15(7):97 - Iran - Cereal and Forage Insects - Lines 11 and 12 - ARMYWORM (Pseudaletia unipuncta) should read *AN ARMYWORM* (*Pseudaletia* sp.). *P. unipuncta* is not known to occur in Asia.

CEIR 15(7):98 - Citrus Insects - Line 7, TEXAS CITRUS MITE (Eutetranychus banksi) should read *A SPIDER MITE* (*Eutetranychus orientalis*).

CEIR 15(7):99 - First paragraph, lines 3 and 4 - IMPORTED CABBAGEWORM (Pieris rapae) should read *CABBAGE WHITE BUTTERFLY* (Pieris rapae). Last paragraph line 5 - Psalmochavias rugipennis should read Psalmocharias rugipennis.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

IN Montana (State or District) DURING 1964 (Year)

ATTACKING Wheat (Commodity or Crop)

A. Pest or pest complex: Hessian fly

B. Number of acres ^{a} produced (From CRS)	No.	3,822,000
C. Average yield per acre ^{a} (From CRS)	Units/	20 bu.
D. Price^b per unit (bu.)^c (From CRS)	$/	1.27
E. Acres ^{a} needing control	No.	787,000
F. Acres ^{a} treated	No.	None
G. Reduction due to not treating where needed:		
H. Loss in yield, percent	%	1
I. Loss in yield, units per acre ^{a}, C x H	Units/	.20 bu.
J. Loss in yield, $ per acre ^{a}, D x I	$/	.25
K. Loss in quality, $ per acre ^{a}	$/	None
L. Yield loss for all acres ^{a}, (E-F) x I	Units	157,400 bu.
M. Control cost, $ per acre ^{a},	$/	0
N. Control cost for all acres ^{a}, F x M	$	0
O. Yield loss for all acres ^{a}, (E-F) x J	$	196,750
P. Quality loss for all acres ^{a}, (E-F) x K	$	0
Q. Combined control cost and losses, N + O + P	$	196,750
R. Percent loss due to each insect in the complex:		

Comment: Losses ranged from an occasional damaged plant to 25 percent in spotted acreage.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

ATTACKING Wheat (Commodity or Crop)

A. Pest or pest complex: Wheat stem sawfly

B. Number of acres ^{a} produced (From CRS)	No.	3,822,000
C. Average yield per acre ^{a} (From CRS)	Units/	20 bu.
D. Price^b per unit (bu.)^c (From CRS)	$/	1.27
E. Acres ^{a} needing control	No.	713,000
F. Acres ^{a} treated	No.	None
G. Reduction due to not treating where needed:		
H. Loss in yield, percent	%	2
I. Loss in yield, units per acre ^{a}, C x H	Units/	.4 bu.
J. Loss in yield, $ per acre ^{a}, D x I	$/	.508
K. Loss in quality, $ per acre ^{a}	$/	Not known
L. Yield loss for all acres ^{a}, (E-F) x I	Units	285,200 bu.
M. Control cost, $ per acre ^{a},	$/	0
N. Control cost for all acres ^{a}, F x M	$	0
O. Yield loss for all acres ^{a}, (E-F) x J	$	362,204.00
P. Quality loss for all acres ^{a}, (E-F) x K	$	0
Q. Combined control cost and losses, N + O + P	$	362,204.00
R. Percent loss due to each insect in the complex:		

Comment: Many growers are using solid stem wheat but no control is attempted otherwise.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

IN Montana (State or District) DURING 1964 (Year)

ATTACKING Wheat (Commodity or Crop)

A. Pest or pest complex: Brown wheat mite

B. Number of acres[a] produced (From CRS) No. 3,822,000

C. Average yield per acre[a] (From CRS) Units/ 26 bu. in counties infested

D. Price[b] per unit (bu.)[c] (From CRS) $/ 1.27

E. Acres[a] needing control No. 140,300

F. Acres[a] treated No. 0

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 4

I. Loss in yield, units per acre[a], C x H Units/ 1 bu.

J. Loss in yield, $ per acre[a], D x I $/ 1.27

K. Loss in quality, $ per acre[a] $/ Quality not affected

L. Yield loss for all acres[a], (E-F) x I Units 140,300 bu.

M. Control cost, $ per acre[a], $/ 0

N. Control cost for all acres[a], F x M $ 0

O. Yield loss for all acres[a], (E-F) x J $ 178,181.00

P. Quality loss for all ----[a], (E-F) x K $ ----

Q. Combined control cost and losses, N + O + P $ 178,181.00

R. Percent loss due to each insect in the complex:

Comment: Cost of control would have exceeded value of loss.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

ATTACKING Corn (Commodity or Crop)

A. Pest or pest complex: Western corn rootworm

B. Number of acres[a] produced (From CRS) No. 38,000

C. Average yield per acre[a] (From CRS) Units/ 12.5 tons

D. Price[b] per unit (ton)[c] (From CRS) $/ 8.00

E. Acres[a] needing control No. 5,000

F. Acres[a] treated No. 2,500

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 20

I. Loss in yield, units per acre[a], C x H Units/ 2.5 tons (dry basis)

J. Loss in yield, $ per acre[a], D x I $/ 20.00

K. Loss in quality, $ per ----[a] $/ ----

L. Yield loss for all acres[a], (E-F) x I Units 6,250 tons

M. Control cost, $ per acre[a], $/ 3.50

N. Control cost for all acres[a], F x M $ 8,750.00

O. Yield loss for all acres[a], (E-F) x J $ 50,000.00

P. Quality loss for all ----[a], (E-F) x K $ ----

Q. Combined control cost and losses, N + O + P $ 58,750.00

R. Percent loss due to each insect in the complex:

Comment: Most of the corn grown in Montana is used as silage.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

IN Montana (State or District) DURING 1964 (Year)

ATTACKING Alfalfa (Commodity or Crop)

A. Pest or pest complex: Alfalfa weevil

B. Number of acres [a] produced (From CRS) No. 1,648,000

C. Average yield per acre [a] (From CRS) Units/ 1.8 tons

D. Price[b] per unit (ton)[c] (From CRS) $/ 25.00

E. Acres [a] needing control No. 450,000

F. Acres [a] treated No. 150,000

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 20

I. Loss in yield, units per acre [a], C x H Units/ .36 ton

J. Loss in yield, $ per acre [a], D x I $/ 9.00

K. Loss in quality, $ per acre [a] $/ 5.00

L. Yield loss for all acres [a], (E-F) x I Units 108,000 tons

M. Control cost, $ per acre [a], $/ 2.50

N. Control cost for all acres [a], F x M $ 375,000

O. Yield loss for all acres [a], (E-F) x J $ 2,700,000

P. Quality loss for all acres [a], (E-F) x K $ 1,500,000

Q. Combined control cost and losses, N + O + P $ 4,575,000

R. Percent loss due to each insect in the complex:

Comment: Many counties did not report. Yield was better than average in 1964. Adult control with an insecticide was excellent, larval control very poor.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

ATTACKING Potatoes (Commodity or Crop)

A. Pest or pest complex: Western potato flea beetle

B. Number of acres [a] produced (From CRS) No. 7,800

C. Average yield per acre [a] (From CRS) Units/ 8 tons

D. Price[b] per unit (ton)[c] (From CRS) $/ 5.00/cwt

E. Acres [a] needing control No. 3,500

F. Acres [a] treated No. 2,500

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 90

I. Loss in yield, units per acre [a], C x H Units/ 7.2 tons

J. Loss in yield, $ per acre [a], D x I $/ None

K. Loss in quality, $ per acre [a] $/ 90.00

L. Yield loss for all acres [a], (E-F) x I Units 7,200 tons

M. Control cost, $ per acre [a], $/ 4.25

N. Control cost for all acres [a], F x M $ 10,625.00

O. Yield loss for all acres [a], (E-F) x J $ None

P. Quality loss for all acres [a], (E-F) x K $ 90,000.00

Q. Combined control cost and losses, N + O + P $ 100,625.00

R. Percent loss due to each insect in the complex:

Comment: There are many small patches of 10 to 20 acres of potatoes in the State that we have no record of, consequently these figures are far short of actual.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Ray Pratt, Assistant State Entomologist

Date December 16, 1964

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1964

(continued from page 120)

CEREAL AND FORAGE INSECTS (continued)

SMALL GRAIN INSECTS

Highlights:

ARMYWORM outbreaks in small grains occurred in several Southern, Prairie, Midwestern and Eastern States during the 1964 season. Damage was heavy in north central, central and upper coastal areas of Texas. A major outbreak occurred in wheat in northeastern Arkansas and a severe outbreak in small grains was underway by May 30 in southeastern Missouri. Considerable damage to wheat at heading time occurred in eastern Kansas, and some damage to small grains was noted in the valley of the Red River of the North in North Dakota. The heaviest armyworm infestation in many years was recorded in southwestern and west central counties of Lower Michigan during June, with some injury reported in southeastern counties, and controls were applied to approximately 380,696 acres of small grains in Illinois. Heavy infestations occurred in Massachusetts in early and mid-July. Outbreak numbers were widely scattered in New Hampshire, and light trap collections of adults in late summer indicated the possibility of a much heavier outbreak in that State in 1965. FALL ARMYWORM was also of considerable concern in small grains in several areas. Infestations were heavier in Arkansas than in 1963, and heavy populations damaged a variety of crops in Oklahoma, including wheat throughout most of the State. Fall armyworm was again serious and widespread in Texas as for the past several years. ARMY CUTWORM caused some light to severe damage to wheat in scattered areas of North Dakota; controls were used in a few scattered wheat fields in east central Colorado, but it is questionable if this was economically desirable because of the prevailing drought conditions. GREENBUG, ENGLISH GRAIN APHID, CORN LEAF APHID and APPLE GRAIN APHID infested small grains to some degree during 1964, but very light damage and only a few controls were applied, and these only locally. The first economic infestation of CHINCH BUG in Indiana during the past 3 years occurred in the northwest portion of that State, where nymphal populations completely inhibited development of millet seedlings planted immediately following wheat harvest. CEREAL LEAF BEETLE infestations were found in an additional 13 counties in Ohio, 20 counties in Michigan and 7 counties in Indiana, but surveys were negative in Illinois and Wisconsin. HESSIAN FLY damaged wheat in Wyoming for the first time in many years. BROWN WHEAT MITE was heavy and widespread on small grain in panhandle and central areas of Texas, and damaged wheat during April and May in east central New Mexico; populations built up rapidly during mid-March in southwest Oklahoma where damage was heavy and controls were required. Brown wheat mite, in conjunction with drought, caused some concern on small grains in Kansas, and economic numbers occurred in scattered wheat fields in southeastern and eastern Colorado, but because of the drought conditions in the area, very little or no control was applied. WINTER GRAIN MITE reached damaging proportions on small grains in north central Texas this season.

ARMYWORM (*Pseudaletia unipuncta*) outbreaks in small grains and other crops occurred in several Southern, Prairie, Midwestern and Eastern States during the 1964 season. Widespread damage to small grains and native and improved pastures occurred over a large portion of TEXAS, with heavy damage reported from north central, central and upper coastal areas. Heavy damage to rice was noted in Jefferson County. Although armyworm infestations occurred in OKLAHOMA during 1964, it caused little damage in that State. Armyworm infestations in ARKANSAS were heavier this season than in 1963. A major outbreak occurred in wheat in the northeast area of the State and required widespread treatments. A minor outbreak in small grains and pastures in October was an unusual occurrence, as fall outbreaks of armyworm are rare in Arkansas. Adults were extremely heavy in the northwest section during October. In MISSOURI, first adults were collected in the southeast on April 23 and first larvae of the 1964 season were observed in the area by May 9, ranging 2-24 and averaging 6-12 per square foot in small grains. Sprays were applied to 227,631 acres in that area, but moderate to heavy damage occurred in many fields. By May 16, small numbers of armyworm larvae were found in the central third of the State, and by May 30 a severe outbreak had occurred throughout the area. Yields of small grains were reduced by two-thirds in many fields. In the northern third of Missouri, moderate to heavy damage occurred in some fields. Armyworm caused considerable damage to wheat in the eastern portion of KANSAS at heading time. Greatest damage was in an area bounded on the west by U.S. Highway 75, on the north by the Kansas River, and on the east and south by the States of Missouri and Oklahoma. Damage ranged from a trace to a few fields having the entire crop consumed. Controls were applied to large acreages in Kansas during 1964 to prevent damage to wheat.

Large numbers of armyworm larvae appeared in the Fargo area of Cass County, NORTH DAKOTA, but this localized infestation was effectively controlled; however, some damage to small grains was observed in scattered areas in the valley of the Red River of the North. Economic numbers of armyworm were found in lodged barley and wheat in northwest MINNESOTA during July. The heaviest armyworm infestation of many years occurred in southwestern and west central counties on the Lower Peninsula of MICHIGAN during June, with some injury reported from southeastern counties. Considerable small grain was sprayed with generally favorable results; however, a few fields were treated unnecessarily because of light infestation and/or delayed timing. A parasitic tachina fly had a material effect on reducing populations.

First armyworm moths of the season in ILLINOIS were taken at Urbana, Champaign County, on April 7, and first larvae were observed in the southern area of the State on April 27. Larval populations varied 0-25 per linear foot in wheat by May 28 and treatments were underway throughout the southern two-thirds of the State. An estimated 380,696 acres of small grain were treated for armyworm control in Illinois during the 1964 season. Although the wet, cool spring in INDIANA would seem to have favored the development of large numbers of armyworm, extensive population patterns did not materialize, although scattered infestations were evident with only minor local areas showing damage. Second-generation larvae of armyworm caused varying degrees of damage to oats, wheat and other crops in OHIO in late July. Damage was reported in Ashland, Delaware, Fulton, Huron, Knox, Medina, Putnam, Richland, Seneca and Wayne Counties. Armyworm caused serious damage to small grains and field corn in Putnam and Wayne Counties, Ohio.

Armyworm infested small grains and other crops in several parts of PENNSYLVANIA. Infestation was late, appearing in July, with FALL ARMYWORM (Spodoptera frugiperda) also numerous at the same time in the State. Armyworms, with P. unipuncta probably the predominant species, infested millet and oats statewide in RHODE ISLAND during a 10-day period in late July, but infestations were not as heavy as on field corn. Heavy armyworm moth flights were noted in MASSACHUSETTS during the period July 14-26. Heavy larval infestations occurred in early and mid-July, reaching a peak between July 25 and August 1. Serious infestations had ended by August 15 except in Berkshire and Essex Counties. Insecticides were applied in those counties in Massachusetts where damage was reported. Armyworm occurred in outbreak numbers at widely scattered areas in NEW HAMPSHIRE during the 1964 season. Light trap collections during late summer yielded high populations of moths, forecasting a much heavier outbreak to be expected in New Hampshire in 1965.

FALL ARMYWORM (Spodoptera frugiperda) infestations were moderate to heavy on a number of crops from southern to northern GEORGIA in 1964. Infestations were quite heavy and more severe than in recent years. The pest was general over the the State on millet as well as other crops. In ARKANSAS, fall armyworm infestations were heavier than in 1963, especially in the western portion of the State.

Fall armyworm was associated with armyworm (Pseudaletia unipuncta) in most instances where the latter pest was present during the fall. Two known infestations of fall armyworm occurred on rice during July in Arkansas, which is rare. Controls for this pest were applied to 2,500 acres of small grains in 1964, which is 0.7 percent of the total acreage in the State. Fall armyworm caused some damage to wheat in eastern KANSAS during the fall of 1964, and became active in grain sorghum in OKLAHOMA in early August. Infestations in Oklahoma increased until heavy populations were damaging a variety of crops and gardens, including wheat throughout most of the State. Fall armyworm continued active in Oklahoma until late November. Fall armyworm was again a serious, widespread pest in TEXAS as it has been over the past several years. Damage was reported to several crops, including small grains, from the eastern section of the State. The outbreak in Texas in 1964 was comparable to those that occurred in the State in 1960, 1962 and 1963.

ARMY CUTWORM (Chorizagrotis auxiliaris) was active from mid-January to late March in OKLAHOMA, but numbers remained low and caused little damage. Development of army cutworm occurred approximately 20 days later than normal in NEBRASKA, but some damage to wheat was noted. Peak moth flights occurred during late May and early June in western Nebraska. Army cutworm caused light to severe damage to winter wheat in isolated areas of southwestern NORTH DAKOTA in 1964. The pest was reported from only scattered areas of southeastern WYOMING during the 1964 season. Light damage to small grains occurred in isolated spots, but there were no reports of damage to alfalfa in Wyoming. Large numbers, however, were reported from Laramie, Goshen, Platte and Park Counties. Controls for army cutworm were used on a few scattered fields of wheat in east central COLORADO. Due to drought, however, it is questionable if control was economically desirable. Some army cutworm infestations were observed or reported on barley in Colorado during the 1964 season.

Several other CUTWORMS were of some concern in various parts of the Nation in 1964. RED-BACKED CUTWORM (Euxoa ochrogaster), BLACK CUTWORM (Agrotis ipsilon) and unspecified species cut off new stands of oats in ALASKA for the first real outbreak of these pests in that State in 5 years. Controls were applied against PALE WESTERN CUTWORM (Agrotis orthogonia) in a few scattered fields of wheat in east central COLORADO, but due to the drought conditions that prevailed this season, it is questionable if this was economically desirable. Some infestations of pale western cutworm occurred in barley in Colorado during 1964. Unspecified cutworms were of little economic importance on wheat, oats and barley in Mesa, Montrose, Delta and Garfield Counties, Colorado, and few controls were needed on any grain crops. Unspecified cutworms caused only slight concern this year on small grain crops in SOUTH DAKOTA.

CORN EARWORM (Heliothis zea) caused moderate damage to millet in GEORGIA by feeding on the heads. Populations of RICE STALK BORER (Chilo plejadellus) and SUGARCANE BORER (Diatraea saccharalis) were unusually low on rice in LOUISIANA during the 1964 season. Heavy numbers of VARIEGATED CUTWORM (Peridroma saucia) were associated with armyworm in small grains during May in ARKANSAS. Variegated cutworm populations ranged medium to heavy during May and June in small grains in most areas of ARIZONA, and DIAMONDBACK MOTH (Plutella maculipennis) infested barley and oats early in the 1964 season in CALIFORNIA.

GREENBUG (Schizaphis graminum) was present in wheat and oats in most areas of ILLINOIS during 1964, but populations always averaged less than one per sweep. Nymphs and winged forms of greenbug were noted on wheat and rye in WISCONSIN by May 15 in Green County and in oats in Trempealeau County by May 22. Some increase was noted, but populations were very low in the State throughout the season. Red leaf was minimal and limited largely to field margins, although small spots in the middle of fields were noted in Outagamie and Oconto Counties. In MINNESOTA, greenbug was again present in small grains, but populations remained low and no economic damage occurred. New migrants of greenbug were found in a field of oats in Clay County, SOUTH DAKOTA, on May 2, where counts averaged 30 per linear foot of row. Throughout the 1964 season, this insect never caused any concern in South Dakota, nor was any damage reported. Greenbug populations were very low in NEBRASKA, counts ranging 1-3 per 10 sweeps on oats and rye in May. Greenbug infestations ranged very light to light on small grains in Laramie and Park Counties, WYOMING. First specimens were noted June 2 and ranged 25-40 per 100 sweeps in Laramie County and 15-30 per 100 sweeps in Park County. Damage was negligible in Wyoming in all instances during the 1964 season.

Greenbug was present in some fields of wheat in eastern COLORADO during 1964, with controls considered necessary in a few instances. Trace to moderate numbers were observed in some fields of malting barley in northeastern Colorado, with controls applied to some fields. Populations of greenbug remained low in KANSAS during 1964, with no serious damage reported, and infestations in ARKANSAS were lower than those of 1963. Greenbug populations were noneconomic to light throughout OKLAHOMA until early April, at which time populations increased in most wheat-growing areas and controls were initiated. Greenbug populations were somewhat heavier in Oklahoma this season than in 1963. First fall activity for 1964 in Oklahoma was noted in mid-November, but freezing weather during late November and early December kept numbers very low. Widespread, light to moderate infestations of greenbug occurred on small grains in northwestern and north central areas of TEXAS, but some locally heavy populations did occur. Greenbug populations remained light in most fields of small grain in the eastern counties of NEW MEXICO during 1964, and no treatments were required.

ENGLISH GRAIN APHID (Macrosiphum avenae) infested barley and oats early in the 1964 season in CALIFORNIA, and light to moderate populations reached peaks during April on small grains in Yuma, Maricopa and Graham Counties, ARIZONA. English grain aphid occurred on small grains in limited numbers during the 1964 season in TEXAS, and infestations were mostly normal in ARKANSAS, except that they were heavier on wheat in the northwest during May when counts were as high as 600 per 100 sweeps. English grain aphid was the most common aphid on small grains during 1964 in OKLAHOMA, but populations remained light throughout the season. Activity had ceased by early May and first fall activity was noted in mid-November, but numbers remained low.

English grain aphid occurred in a few fields of wheat in eastern COLORADO, with controls considered necessary in a few instances. Trace to moderate numbers occurred in some fields of malting barley in northeast Colorado, with some controls being applied. English grain aphid populations remained low in KANSAS with no serious damage reported, and very low numbers of 1-2 per 10 sweeps were present in oats and wheat during May in NEBRASKA. The pest was present in wheat and oats throughout ILLINOIS but apparently caused no economic damage during the 1964 season. Winged forms of English grain aphid appeared in rye by April 17 in WISCONSIN, and fully developed embryos were noted a week later. Nymphs were present May 1, but populations were low, and a few were noted in advanced oats by May 15. Populations of this aphid increased slightly through May and June in Wisconsin but failed to create a problem as populations averaged only 1-3 per sweep. English grain aphid was again present in small grains in MINNESOTA, but populations remained low and no economic damage occurred in the State during 1964.

CORN LEAF APHID (Rhopalosiphum maidis) occurred on small grains in limited numbers in TEXAS during 1964, and was generally light on small grains in OKLAHOMA, where fall activity in wheat began in early November. In COLORADO, some infestations of this aphid were reported or observed on barley during the growing season, and numbers and/or injury on barley were about normal in UTAH.

APPLE GRAIN APHID (Rhopalosiphum fitchii) infestations were observed on barley and oats early in the 1964 season in CALIFORNIA, and appeared in some fields of wheat in western COLORADO where some slight losses occurred. Apple grain aphid infested barley during 1964 in Colorado, being present in the northeastern part of the State at levels requiring controls on malting barley. Of the aphids present on wheat, oats and barley in Mesa, Montrose, Delta and Garfield Counties, Colorado, during the season, R. fitchii was the dominant species. Populations ranged light to moderate in these counties most of the season, with occasional controls required. Apple grain aphid populations remained low in KANSAS with no serious damage reported, and populations were low throughout OKLAHOMA during the winter and spring. Infestations disappeared in that State in early March. Fall activity of this aphid was first noted in late October but numbers remained low for the remainder of the year. In TEXAS, limited numbers of apple grain aphid were noted on small grains during 1964.

Unspecified APHIDS on small grains were observed in MISSOURI and populations were relatively light and inconsequential in NORTH DAKOTA during the 1964 season.

First adults of SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) of the 1964 season in MICHIGAN were collected during the week ending May 29 in Allegan, Livingston and Monroe Counties, and high populations were present in oats by the second week of June in the southwestern portion of the State. Populations were very low in NEBRASKA, causing no major damage to small grains or legumes. In CALIFORNIA, infestations of six-spotted leafhopper and of another LEAFHOPPER (*Deltocephalus fuscinervosus*) occurred on barley and oats early in the 1964 season.

CHINCH BUG (*Blissus leucopterus*) caused some damage to wheat in southeastern PENNSYLVANIA in early June, and second-generation nymphs were abundant and damaged millet in ILLINOIS during August. Chinch bug was also observed on small grains in MISSOURI during the 1964 season. The first economic infestation of chinch bug reported in INDIANA during the past 3 years occurred in the northwest section of the State in 1964. Nymphal populations completely inhibited development of millet seedlings planted immediately following wheat harvest. Of the 4,000 acres of millet planted in northwest Indiana in 1964, approximately 3,000 acres were lost.

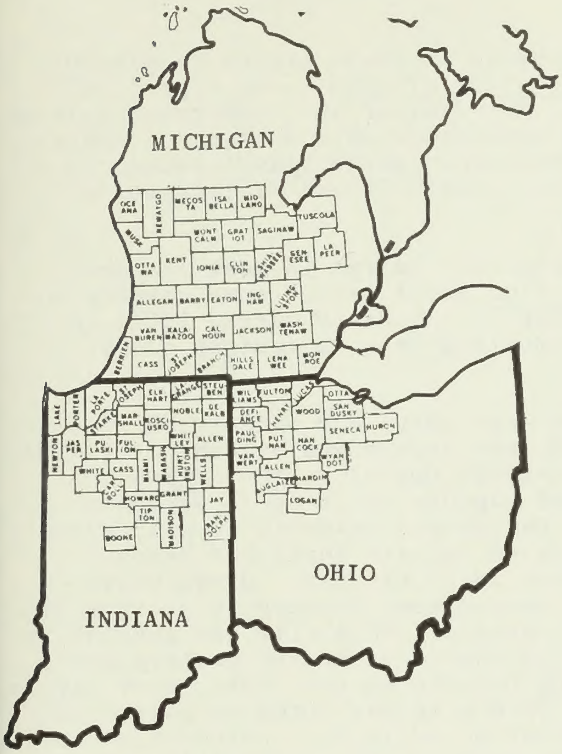
Extremely heavy populations of FALSE CHINCH BUG (*Nysius ericae*) were found in fields of barley southeast of Carlsbad in Eddy County, NEW MEXICO, which necessitated application of controls. Adult counts often averaged over 100 per head of grain and one pint per 5 sweeps. Lighter infestations were reported on grain sorghum in Roosevelt and Luna Counties. FALSE CHINCH BUGS (*Nysius* spp.) were reported on a wide variety of cereal crops from most all areas of TEXAS during the 1964 season.

RICE STINK BUG (*Oebalus pugnax pugnax*) populations were unusually light throughout the rice-growing area of LOUISIANA during the season, but controls were required in a few fields. In ARKANSAS, rice stink bug populations were lower than those of 1963. The earliest record for 1964 in the State was in small grain on May 2. A total of 9,200 acres of rice was treated, which represented 2.6 percent of the rice acreage in Arkansas for 1964.

A PLANT BUG (*Irbisia sita*) was noted infesting barley and oats early in the season in CALIFORNIA, and unspecified PLANT BUGS severely damaged portions of wheat fields in southeastern WASHINGTON in early summer.

CEREAL LEAF BEETLE (*Oulema melanopa*) was found in 13 additional counties in OHIO during 1964, making a total of 19 counties in the northwest section of the State known to be infested. Newly infested counties were Paulding, Van Wert, Putnam, Auglaize, Logan, Hardin, Hancock, Wood, Ottawa, Sandusky, Seneca, Wyandot and Huron. Cereal leaf beetle populations have not yet reached economic proportions in Ohio. On June 29, a quarantine was imposed on all 88 counties in the State, 20 of which are regulated. Surveys revealed 20 counties in MICHIGAN to be infested for the first time during 1964. In early June, a new quarantine became effective and included all areas known to be infested in the State in 1963 and 1964. The present quarantined area generally includes southwest Michigan, extending as far north and east as, and including, Oceana, Newaygo, Mecosta, Isabella, Clare, Midland, Saginaw, Tuscola, Lapeer, Oakland, Washtenaw and

Distribution of Cereal Leaf Beetle
in the United States
as of December 31, 1964



Outlined counties infested.

Monroe Counties. A State-Federal suppression program similar to that conducted in 1963 was carried out in areas of heaviest infestation in the State. An organic phosphate insecticide used in low dosages without a diluent proved highly effective against adults and larvae. Excellent results were obtained with aerial applications of this material against spring adults, larvae and summer adults in Michigan. The range of cereal leaf beetle continued to be extended in INDIANA, where infestations were found for the first time during the 1964 season in Boone, Jay, Tipton, Randolph, Madison, Newton and Wells Counties. High populations, however, were confined to oats in La Porte and St. Joseph Counties. In this area, peak oviposition on oats occurred about May 28, with egg counts as high as 300-350 per 100 stems. An 80-percent hatch had occurred by June 5, with maximum populations reaching approximately 100-150 larvae per square foot. Pupation was considered 70 percent complete by June 12 and first emergence of summer adults in Indiana probably occurred about June 10. Emerging summer adults reached peak numbers in the State on July 1, with a subsequent rapid decline. By July 24, summer adults were nearly 100 percent in aestivation.

Although repeated surveys for cereal leaf beetle were conducted in ILLINOIS during the 1964 season, the species was not found in that State, and surveys in 13 southeastern and eastern counties of WISCONSIN were also negative.

RICE WATER WEEVIL (Lissorhoptrus oryzophilus) populations in rice were at about the same level as during the past 3 seasons in LOUISIANA. Small numbers of Lissorhoptrus simplex were found mixed with the populations of rice water weevil in one area near Crowley, Acadia Parish. In ARKANSAS, larvae of a BILLBUG (Sphenophorus sp.) in stems of rice on levees caused concern in a few isolated instances, and unspecified SCARAB larvae were locally damaging to small grains in south central TEXAS during the 1964 season.

Large numbers of HESSIAN FLY (Mayetiola destructor*) larvae were found infesting spring wheat in WYOMING near Newcastle, Weston County, with approximately 50-80 percent lodging observed in experimental spring wheat plots. This is the first report of damage by this pest in Wyoming for many years, but no damage was reported from other areas of the State. Infestations of Hessian fly remained very low throughout the season in NEBRASKA with no extensive damage reported, and the pest continued to be of noneconomic importance in KANSAS. Hessian fly was noted in small grains in MISSOURI and was of occasional concern on wheat in VIRGINIA. In INDIANA, Race B field infestations of Hessian fly, capable of infesting the W38 resistant wheats, Dual, Monon, Reed and Redcoat, continued to be a threat, although average infestations were lower in 1964 than they were in 1963. Only 35 percent of the 361 certified fields of wheat sampled in Indiana during 1964 demonstrated infestation with this fly. This year, for the first time, 3 of 80 fields of Knox 62 wheat sampled showed slight infestations, which indicated the presence of Race C or D of Hessian fly. These fields were located in Porter, Tippecanoe and Warrick Counties.

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* Barnes, H. F. 1956. Gall midges of economic importance. Vol. 7. Gall midges of cereal crops. Pp. 95-141. London.

WHEAT STEM MAGGOT (Meromyza americana) was observed in small grains in MISSOURI during the 1964 season. A LEAF MINER FLY (Hydrellia griseola) was a pest of rice in Butte and Glenn Counties, CALIFORNIA. A survey of the rice-growing areas of California was negative for any species of importance this season. A survey for WHEAT STEM SAWFLY (Cephus cinctus) in northwestern NORTH DAKOTA showed 14.6 percent of dissected stems of wheat to be infested with larvae of this pest; counts were made in margins of fields.

A BARLEY THRIPS (Limothrips denticornis) was abundant in rye in most eastern areas of NORTH DAKOTA, and FIELD CRICKETS (Gryllus spp.) caused some concern on various cereal crops in the northeastern portion of the State during 1964. A DESERT TERMITE (Amitermes sp.) was reported infesting oats in Madison County, TEXAS, in October.

BROWN WHEAT MITE (Petrobia latens) populations were heavy and widespread on small grains in panhandle and central areas of TEXAS, and damage was evident in fields of wheat during April and May in Curry and Roosevelt Counties, NEW MEXICO. Brown wheat mite became active in mid-March and rapidly built up to economic levels in southwestern counties of OKLAHOMA. Damage was heavy in several areas and controls were necessary. Populations declined in late April but heavy numbers were still present in small, local areas until mid-May. Brown wheat mite, in conjunction with drought conditions, caused some concern to growers of small grains in western KANSAS during the 1964 season. This mite was present in economic numbers in scattered fields of wheat in southeastern and eastern areas of COLORADO this season. Due to the prevailing drought in the State, very little or no control was applied in affected areas. This mite was noted on barley in Colorado during 1964. Brown wheat mite was first noted in the southeastern wheat-growing area of WYOMING on May 6. Numbers increased in the area until June 2 at which time adults and nymphs ranged 20-250 and averaged 70 per linear foot of row of wheat in fields in Laramie, Goshen and Platte Counties. Overall populations of this mite were lower in Wyoming than those found in 1963. Brown wheat mite populations were below economic levels in NEVADA during 1964, and the pest was a problem on small grains locally in Siskiyou County, CALIFORNIA.

The expected increase in incidence of WHEAT CURL MITE (Acria tulipae) and of wheat streak mosaic did not materialize in northeastern sections of COLORADO in 1964; however, there was a small loss due to the disease in some fields. Wheat streak mosaic, a virus disease transmitted by wheat curl mite, was found in nearly all fields of wheat surveyed in eastern WYOMING in early June. No disease incidence of economic importance was found except for one badly infected field south of Pine Bluffs in Laramie County. Mites were found in isolated fields widely distributed throughout the wheat-growing areas of Wyoming. In KANSAS, wheat curl mite was present only in low numbers and only a trace of damage occurred in the harvested crop for 1964.

WINTER GRAIN MITE (Penthaleus major) populations reached damaging proportions on small grains in north central TEXAS during late winter and early spring, and the mite was present in OKLAHOMA from late February to late April but numbers remained light in most areas of that State. Infestations of winter grain mite appeared early in the season in CALIFORNIA on barley and oats.

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